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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,502	10/07/2003	Karl O. Christie	AFB00648	5907

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EXAMINER

FELTON, AILEEN BAKER

ART UNIT	PAPER NUMBER
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1793

MAIL DATE	DELIVERY MODE
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11/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/681,502

Applicant(s)

CHRISTE ET AL.

Examiner

Aileen B. Felton

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/4/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 8, 10, 11, 15, 16, 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 12-14, 17, 18 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) ☐ Notice of Informal Patent Application |
| 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) ☐ Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1, 3, 4, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Brennecke et al. (US 6,579,343 B2).

As to claims 1, 3, 4, 13, Brennecke et al. disclose an energetic material (in that capable of being energetic) of low vapor pressure comprising ionic liquids having a fuel cation, imidazolium (col. 7 lines 7-10), and an oxidizer anion, perchlorate (col. 7 lines 34-41); the salt would be a single or plural type of ionic compound and asymmetric.

4. Claim 1, 3, 4, 6, 13, and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Schwarz (6048388).

As to claims 1, 3, 4, 6, 13, and 14, Schwarz discloses an energetic material (in that capable of being energetic) of low vapor pressure comprising ionic liquids having a fuel cation, imidazolium (alkyl substituted shown in col. 9) and an oxidizer anion, perchlorate (see claim 11), the salt would be a single or plural type of ionic compound and asymmetric.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 5-7, 12, 14, 17, 18, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brennecke et al. (US 6,579,343 B2).

As to claims 2, 17, and 18, the limitations of claim 1 are disclosed as described above. Not disclosed are the cation and anion being oxygen balanced. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the anion of Brennecke et al., for example using substituted aryl - nitro groups (see col. 8 lines 48-53), so as to achieve substantial oxygen balance depending upon use of the LICs as a gas separator. This material would be inherently explosive and when oxidized produce the type of compounds of claim 18.

As to claims 5, 7, 12, and 21, the limitations of claim 1 are disclosed as described above. Not disclosed are the cation and anion being oxygen balanced. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the anion of Brennecke et al., for example using substituted aryl, nitro groups (see col. 8 lines 48-53), so as to achieve substantial oxygen balance depending upon use of the LICs as a gas separator which would achieve near complete combustion.

As to claims 6 and 14, the limitations of claim 1 are disclosed as described above. Not disclosed are the cation an N-alkyl substituted imidazolium and the anion perchlorato. Brennecke et al., however, discloses the cation an N-alkyl substituted imidazolium (col. 7 lines 7-40, col. 8 lines 48-53) and the anion perchlorato (col. 7 lines 34-40). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the cation and anion of Brennecke et al., by using the cation an N-alkyl substituted imidazolium and the anion perchlorato so as to depending upon use of the LICs as a gas separator.

7. Claims 2, 5, 7, 12, 17, 18, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwarz (6048388).

As to claims 2, 17, and 18, the limitations of claim 1 are disclosed as described above. Not disclosed are the cation and anion being oxygen balanced. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the anion of Schwarz, for example using substituted aryl - nitro groups, so as to achieve substantial oxygen balance. This material would be inherently explosive and when oxidized produce the type of compounds of claim 18.

As to claims 5, 7, 12, and 21, the limitations of claim 1 are disclosed as described above. Not disclosed are the cation and anion being oxygen balanced. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the anion of Schwarz, for example using substituted aryl, nitro groups, so as to achieve substantial oxygen balance which would achieve near complete combustion.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brennecke et al. (US 6,579,343 B2) in view of Flanagan et al. (US 4,141,910).

As to claim 9, the limitations of claim 6 are disclosed as described above. Not disclosed is the imidazolium having trinitroethyl and azidomethyl groups. Flanagan et al., however, disclose the addition of azidomethyl and trinitroethyl groups (col. 2 example II and col. 4 example VIII). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the salt of Brennecke et al. by adding specific R groups of azidomethyl and trinitroethyl groups as disclosed Flanagan et al. depending upon use and needed characteristics of the salt.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schwarz (6048388) in view of Flanagan et al. (US 4,141,910).

As to claim 9, the limitations of claim 6 are disclosed as described above. Not disclosed is the imidazolium having trinitroethyl and azidomethyl groups. Flanagan et al., however, disclose the addition of azidomethyl and trinitroethyl groups (col. 2 example II and col. 4 example VIII). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the salt of Schwarz by adding specific R

groups of azidomethyl and trinitroethyl groups as disclosed Flanagan et al. depending upon use and needed characteristics of the salt.

Response to Arguments

10. Applicant's arguments have been fully considered but they are not persuasive.

The Declaration is ineffective to swear back to 3-30-2001 since no evidence is provided to establish this date. See 37 CFR 1.131, which states "Original exhibits of drawings or records, or photocopies thereof, must accompany and form part of the affidavit or declaration or their absence must be satisfactorily explained". Applicant has created this document and now has changed the date from the previous declaration, thus it is not considered to be evidence of the earlier date.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aileen B. Felton whose telephone number is 571.272.6875. The examiner can normally be reached on Monday-Friday 6:30-4:00, except alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571.272.1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aileen' Felton/
Primary Examiner
Art Unit 1793